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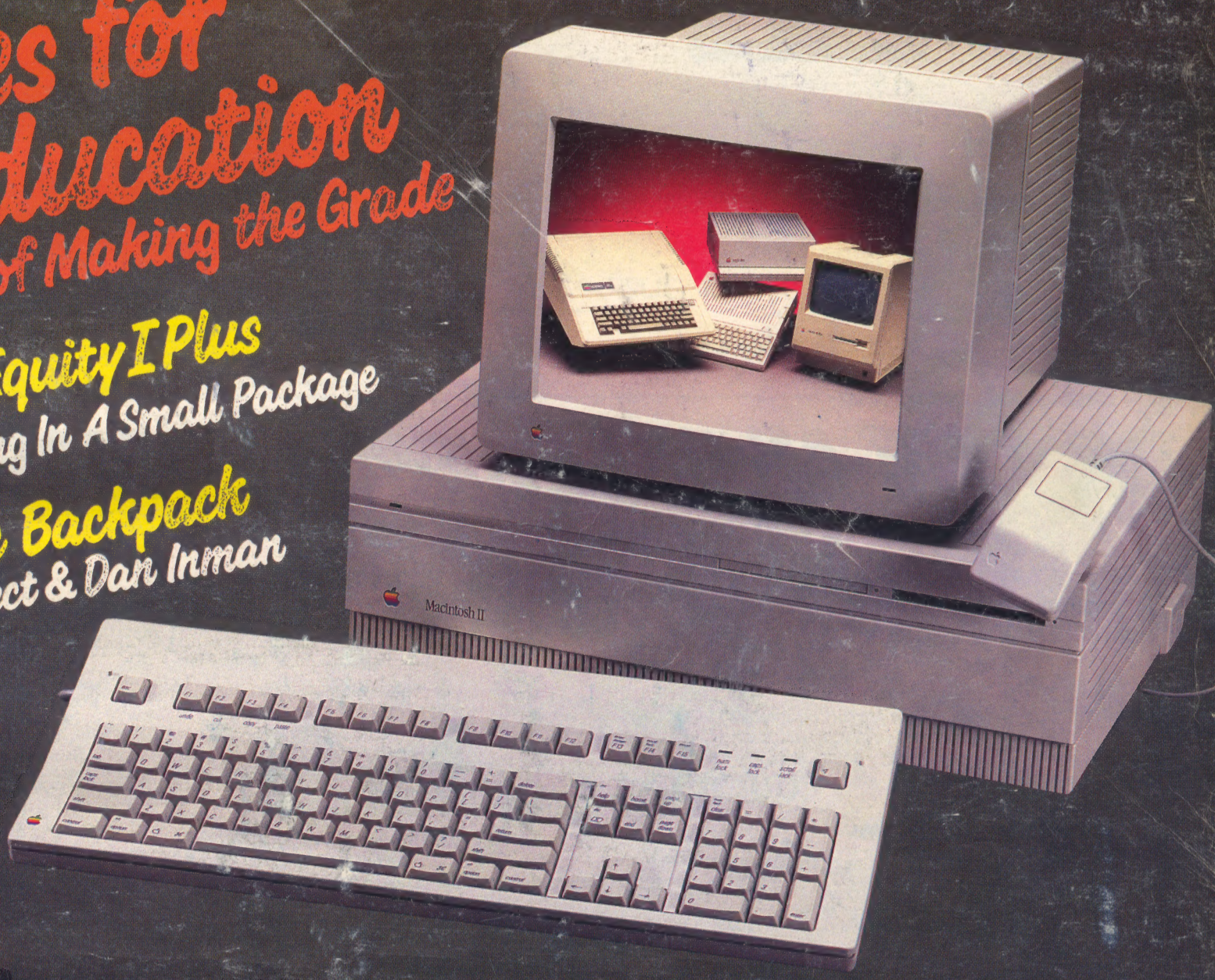
A Decade of Making the Grade

Epson Equity I Plus
A Good Thing In A Small Package

Your Basic Backpack
by Bob Albrect & Dan Inman



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ATARI ST

The Many Facets Of GEM—Part 3

by Peter Ruber

GEM Graph

You've seen them as sections of a pie. As squiggly lines dancing across a page. Or even as monolithic columns rising upward boldly from the bottom of a page. Yes, we're talking about charts and graphs, the great artistic infatuation of America's corporate boardrooms.

Graphs and charts are not my favorite preoccupation. I ignore them in magazines because I like words better. Words have meaning. They're expressions of ideas. They have a soul. Graphs are cold and calculating.

After working with GEM Graph for a while, I really haven't changed my mind about what they represent, but I got to like the program. Graph is fast and powerful. It makes the usual assortment of popular formats.

This is one of the few programs in the GEM series that can be controlled by cursor keys alone. Write allows you to dispense with the mouse critter; but when you get into drawing or painting there is no way that you can execute a curve or a subtle shape by using the cursor keys. Since I'm still in the acquaintance stage with my desktop companion, I use a combination of cursor keys, function keys, and the rodent depending on how the mood strikes me.

Since the installation process is fairly consistent with all GEM programs, we are not going to waste time by retreading these steps. Instead, we'll get right to work.

When you "click" on the GRAPH.APP window you enter the Graph Screen. Across the top, as usual, we have Menu Bar. This will change a bit from program to program, and under that the Title Bar. The physical window has the appearance of a spreadsheet with numerical columns running down the left side. This represents the "X Axis." Running horizontally, and falling off the screen to the right, are alpha columns representing the "Y Axis." There are slider arrows located on certain screen corners that allow you to pan across, up and down, to get to any portion of your screen to effect changes.

Spaces at the top allow you to enter the Title and Subtitle of your chart or graph. The product or subject category to be represented is entered into the appropriate spaces in the "X Axis." Numerical correspondents across the "Y Axis." If you're making a basic pie chart, you will only need one column in the "Y Axis." More complex charts that may represent a monthly breakdown of dollar amounts or percentages for each category are more suitable for graph lines across the page. But for really dramatic effects, 3-D columns can be constructed not just across the page, but also in back of one another to make it simple for your boss to grasp what's happening.

Needless to say, you must have all data prepared in advance. After entering the subject text on the "X Axis" you slide over to the first column on the "Y Axis" to enter your numerical data. A carriage return ends a column entry and the block cursor moves down one box.

When all the data has been entered, you must save it as a file. Each GEM program, in case I haven't mentioned it yet, establishes a 3-letter extension that is unique to the program you are using. It is, of course, recommended that you use these extensions because it will simplify your recognizing different file types when you begin incorporating them into other programs. You can be obstinate and create your own file extensions if it suits you. However, not all files can be transported between programs in an as-is condition. You may have to create a duplicate folder within the program and give it a *.GEM extension to create portability. Check carefully for this restriction before swapping.

To display a graph on the screen (or on a printer) you must now direct it To Output, having first selected a graph type from the Gallery Menu. After a bit of churning it appears on screen, and GEM will have assigned a colors and patterns within a pie chart, a 3-D graph, etc., in order to give it depth and dimension.

If the headline text isn't dramatic enough for you, you can change the font and size. You can also alter the colors and patterns to suit your tastes, by sliding the mouse to the toolkit area and dragging back substitutes. This procedure is a little nerve-wracking at first, but you will develop the skill rather quickly. You needn't fear that you are doing something wrong that might blow up your picture. Remember, you have already saved it. You are now creating a customized version that you can save again.

If you have a color printer or plotter that is capable of reproducing colors, bear in mind that the printing device may not support all the colors that are on the screen. So, if color balance is a criteria in the preparation of film transparency, you should become thoroughly familiar with your printer/plotter's limitations. Less concern will come into play if you plan to make direct Polaroid prints or slides from your monitor's screen.

Here are the basic elements that will be concerned with when you prepare charts and graphs:

Axis Scale: Increment between tick marks on an axis.

Data Set: Set of numbers that is plotted to create a line, bar or other graph type.

Grid Lines: Lines extending from the axes on to the graph to mark the units of measurement and make the graph easier to read.

Labels: Text describing what is measured on each axis.

Legend: Explanation of the patterns, line styles, symbols, and labels used in the graph.

Tick Marks: Short marks on to the axes to show the units of measurement.

X Axis: Axis showing units of time, names of items, or other classifying labels.

Y Axis: Axis showing scale of measurement for the graph.

Once you feel comfortable with the basics, you can move into more sophisticated areas. These include exploding a pie chart to remove a slice, perhaps to dramatize it. You can also move certain elements to improve the layout, or add comments to certain sections to offer additional factual references. A bar graph can be enhanced by superimposing a line graph to illustrate a moving average over the same period of time.

GEM Graph also comes with a symbol library of assorted objects that are pertinent to statistical representation of population, travel, production and so forth. Additionally, there are maps of the U.S. and Europe which can be used as a complete entity or regionalized. A Map Editor is included so that you can rearrange the map to suit your needs. You can, for example, combine two or more regions into one. Colors and fill patterns can then be changed accordingly. The Symbols library only contains a dozen basic files. GEM Draw (to be covered in Part 4) can be used to expand your library in a direction that complements your needs.

If you already have a database of facts and figures that have been generated by other programs, many of them can be imported to GEM Graph. These include:

DIF files: Data interchange

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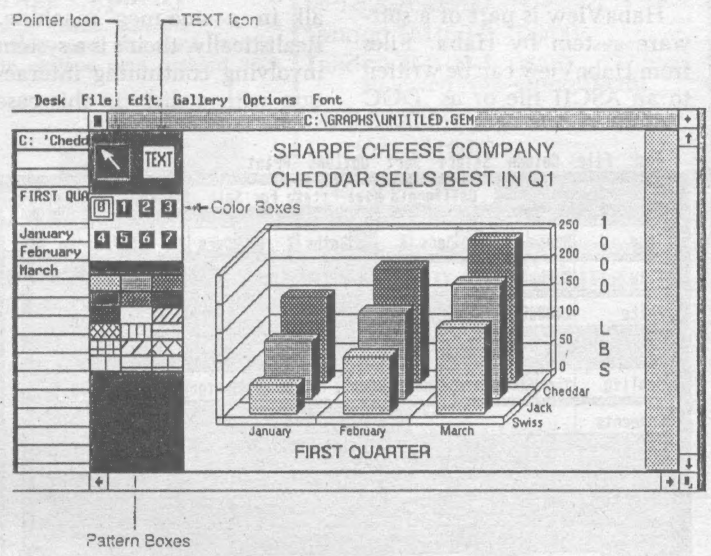

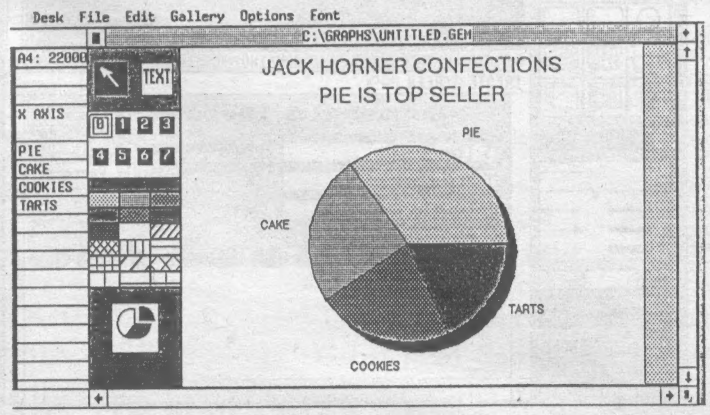

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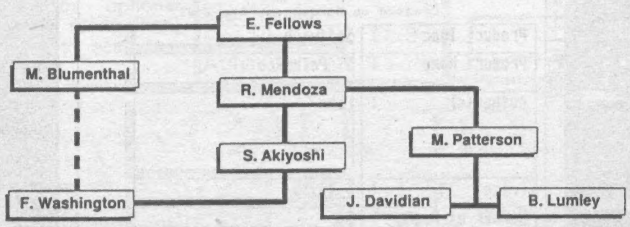

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DataTrieve And HabaView— Two Databases For The Atari ST

by Robert Westcott

Databases are like noses—you wouldn't want to be without one, and preferences stem more often from the cosmetic than the substantive, at least in the consumer (home/small business) oriented Atari ST market.

Outside of those business applications that require the power, size, and versatility of a Lotus-like environment, most databases will handle the needs of Joe Consumer, who wants to keep track of the membership of his Elks Lodge, or his medical expenditures, or something of like ilk.

Mr. Consumer (i.e. you, the reader) wants software that will do the job with a minimal hassle learning and using it, and DataTrieve and HabaView gives you just that. As Joe Friday would say, "Just the facts, Ma'am."

HabaView and DataTrieve have a lot in common. Both come from Europe—Haba from England and Abacus' DataTrieve from our friends at Data Becker in Germany. Both use full GEM implementation. On the negative side, both are copy-protected.

HabaView is part of a software system by Haba. Files from HabaView can be written to an ASCII file or as .DOC files with control characters for HabaWriter. I personally like the integrated software concept. I just wish everybody could agree on a standard so you could use, say, Haba Files with a Timeworks word processor. Everybody does something a little better than the next guy, and it would be nice to be able to mix and match.

Both HabaView and DataTrieve have more than enough power for just about any home or small-business application. Of the two, DataTrieve is, by a considerable margin, the more powerful, though, as I will explain, HabaView has some features DataTrieve does not have.

HabaView supports a file size equal to the available RAM in your computer. While I have not tested this out, I would assume this means about 500K for a 520ST and a Meg for the 1040, minus some memory for the program itself. For home inventory or the records of a small business within a year, this should be adequate.

DataTrieve allows for a file size of two billion characters, though I can't for the life of me imagine where they put them all in a one-meg machine. Realistically, their's is a system involving continuing interaction with a disk (in this case hard disk) file that involves the larger disk size, much in the same way that file transfers via modem are accomplished. While I may never need this extra capability, I personally like having it, and am willing to pay the price of having the program at times run slower to get it.

Record size, too, with HabaView is more limited than with DataTrieve. While I may never go beyond the 32 fields per record allowed by HabaView in keeping track of my home budget, if I use the program to keep track of the different line items in my church budget, I'm out of luck. I'm also out of luck if the number of characters in my fields exceed 1,000, because that's the limit with HabaView.

DataTrieve, on the other hand, supports a 64,000 character record size, with number of fields limited only by that record size. On larger budget or inventory control applications, the extra capacity of DataTrieve could be a big plus.

In the category of data field types, DataTrieve offers three field types: text, date, and numeric. HabaView adds to these—time, alpha, and yes/no fields. While DataTrieve lacks three field types HabaView offers, this type of information can be easily included in the three field types DataTrieve offers. The one inconvenience would be in the time area, where data to be sorted in DataTrieve would have to be entered in military (24 hour) time.

Of greater significance is the difference in the way the two programs handle numeric or amount fields. HabaView gives you only the straight entry option, whereas DataTrieve offers the calculation option. What this means is that with DataTrieve, you can do a ledger without having to do the math outside the program, and this has to be viewed as an important selection consideration.

DataTrieve allows for not only the standard add/subtract /multiply/divide options, but also handles exponentiation, modulo, trigonometric functions, logarithmic functions, square root, absolute value, integer parts of numbers, and the constant PI.

The program handles numeric operations to 15 significant digits, which should cover any applications an ST user might encounter.

A good database must have not only the ability to store data for future retrieval, but to sort and sift it as well.

Since I spend a lot of my time in the law enforcement field, let me give you an idea of how search/sort works in that arena. First off, I set up a database file of possible suspects. These might be people who have been arrested, or people informants tell me are involved in a particular type of activity. I gather as much information about these people as possible and enter it into my database.

One day down the road, the First National Bank is hit, and alas, we have a suspect description. He is described as a white male, six feet tall, blonde, shoulder length hair, blue eyes, with a three-inch vertical scar on his left cheek. He leaves the bank in a white Camaro with Florida plates.

With my database, I enter search mode, and input what I know about the suspect as search criteria. If I have a good database and a little luck, out comes a list of possible suspects. Out of thousands of entries in my file, those that match the description of the perpetrator have been sorted out in a matter of seconds.

Search function is important not just in catching bad guys, but in such diverse activities as remembering special occasions you need to address with cards or gifts, and setting up a schedule for paying the various bills that come due for you in the course of a year.

Any database can do a simple, one-item search. HabaView and DataTrieve offer the option of multiple criteria, though they do it in different ways.

HabaView handles multiple criteria search with what they call a progressive sort. Basically, this is a multi-stage process of elimination process where subranges are created, and then newer criteria are added to produce a smaller subrange, and so on and so forth down the tree structure. This system works, and for some applications is the best way to go, but it can be quite time-consuming and operator intensive—in other words more work for you.

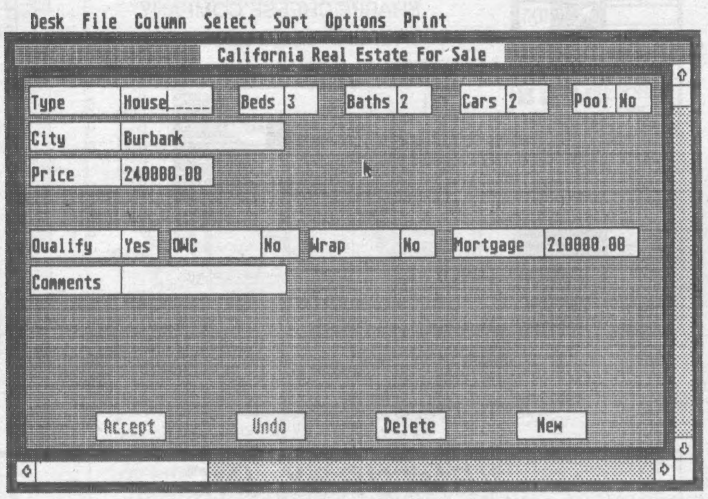
DataTrieve offers a quicker search method for many applications, and that is the multiple criteria search. Going back to my bank robber scenario, I would have categories for such things as race, sex, height, weight, eye color, hair color, etc., and each of these would be a field. With multiple criteria search, each of the appropriate fields would be searched for a match, and the output would be those individuals who met all the criteria. I could, if I wished, set my search criteria for a range match rather than an exact match—say in height, for example, for between five feet ten inches in height and six feet two inches tall.

With DataTrieve, twenty such index fields could be handled in one operation.

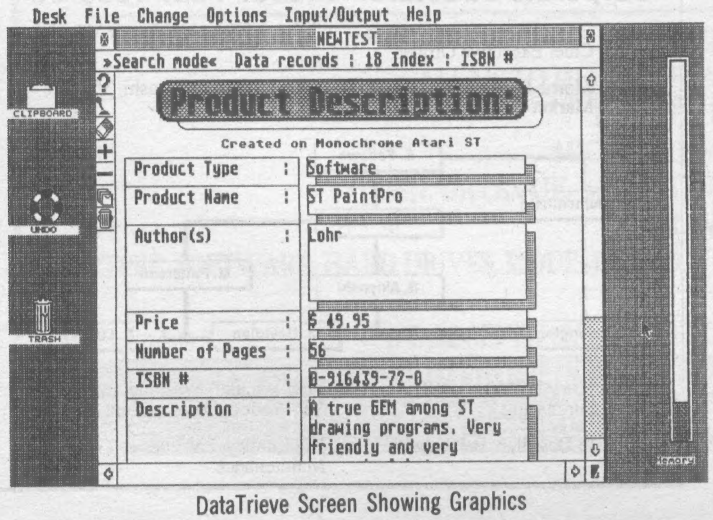
Summing up a comparison of the overall performance of these two programs, HabaView is adequate for many applications, while DataTrieve offers more power and more options, and thus can take on bigger and more complex projects.

An important criteria in evaluating software is its user-friendliness. This is particularly true in home-user software. People in full-time business can afford the time to learn complex routines, and will spend the time. The average Joe on the street who bought a computer to save him time and make life easier does not get his kicks deciphering a poorly or overly-technically written user manual. Joe Consumer also likes tutorials available, and if possible user templates.

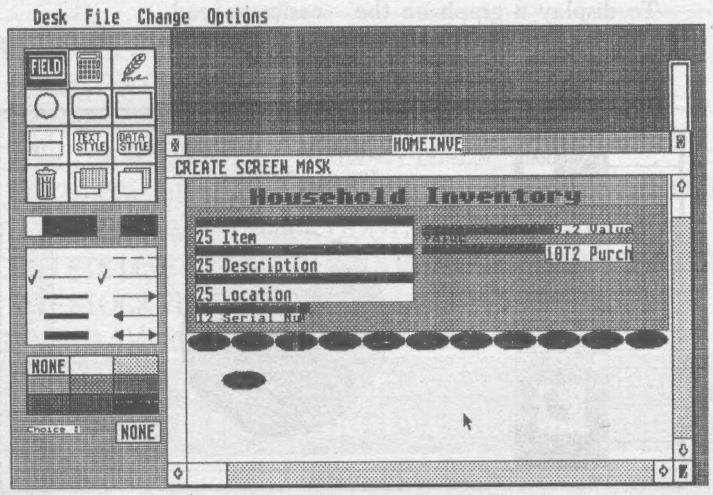
Here is where DataTrieve



HabaView Screen



DataTrieve Screen Showing Graphics



DataView Screen Showing Tools

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CLASSIC COMPUTERS

Introduction To Classic Computers

by Stan Veit

This new head may upset some readers but bear with us. All we have done is to group the sections devoted to some of the older machines into one section. The heads for each classification are still here. However, the rate at which users are moving to the newer machines is accelerating mainly because of the price of PC/XT/AT clones and the desire of many people to take advantage of the software only available for these machines. This may leave us very short of material for one or the other machines in any one month. For example, we were hard put to find articles to print concerning 8-bit Tandy machines last month. We are not the only magazine with this problem, but it concerns us because we want to continue to be known as the voice of the classic computer user.

The section will consist of all of the 8-bit computers plus the TI-99/4A. With this arrangement, we are much more flexible and can even find space to print articles about machines we are not covering such as Adam, SOL, Digital Group, Apple III, and who knows what else. Are there people out there still using PDP-8s? How about IBM 5100?

Computer Shopper can become your national home as well as the voice of the TI-99ers and T/S folks.

All it takes is a little cooperation on your part, we need articles and software to make this happen. I offer you the print space and part of our SIG on Delphi for a software database.

A few years ago I ran CEMSIG on Compuserve and we supported all kinds of computers. Many of the existing Forums on this network were split off from our SIG. The remaining sections became known as The Club after I left and just about held their own because they had no where else to go. I hear they are about to move because of the rates on Compuserve. I invite the Timex folks and Adam people to join me in *Computer Shopper* on Delphi. Even if you have already joined another network look at our group as a chance to obtain both online and print support for your favorite system.

It may take a little time but together we can build an area of mutual interest including all of the Classic Computer users and Computer History buffs. ●

ATARI

Note and Point... Atari News And Comment

by John Nagy

Here's more collected bits of news, rumors, and self-help tips for Atari owners! Sorry for not being here for a couple months, but problems in communication have been cleared, and you should see this column more regularly now. I have a lot to catch up on!

Atari Corporation Stock, first released in November of last year at about $11.50 a share, is at the time of this writing selling at about $15. Of course, that's only impressive if you know that the stock split two-for-one in June. That's more than doubling in only six months. Investors should be pretty happy. The stock climbed slowly but spurted after announcements of the PC Clone and the new lines of Mega-ST in early 1987, but then slipped as it became clear that delivery would not be until at least summer.

Finally, with the announcements of the actual production of the new products and the split, the stock is at an all time high. (Remember that you read this nearly a month after I write it—the market may change!)

Atari Corp has a new vice president. Former Texas Instruments and IBM exec Jerry Brown (not the one Linda Ronstadt was seeing...) is the new vice president and general manager of U.S. Operations.

The Commodore-Atari lawsuits have finally been settled, although no details are available at this writing as to who pays who what.

It is expected that Commodore will pay Atari something as a result of the three-year old lawsuit that charged Commodore with patent infringements. Atari had an exclusive development contract with a small firm for support and graphics chips...and then the firm was bought by Commodore, who promptly told Atari where it could go for chips. The name of the little firm? Amiga, Inc. Atari sued Commodore both for breach of contract and for putting Atari developed chips in the Amiga computer...when Atari couldn't even get them.

In what may or may not be a related event, Commodore subsequently fired their president and management staff, according to the April 23 *Wall Street Journal.* The ousted officials are suing for nine million dollars. Ouch! Commodore is counters uing, of course.

8-bit prices rise. It may be due to Reagan's latest slap with tariffs, or just a decision out in California, but dealers have been notified of a healthy 10-15% price hike in 8-bit Atari hardware. Any time now, the XE may pass the ST as

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COMMODORE

Comal Comes to C128 CP/M; More Letters and Help

by Cheryl Peterson

The most exciting news I've heard in months has hit the Commodore 128's CP/M side. Comal has been redesigned to run on the C128. Len Lindsay and friends have taken this easy to use programming language and modified it to work on the C128. This is exciting because there is a wide variety of public domain software programs available that run under Comal.

Comal is one of the best supported programming languages for the Commodore computers, as well. With many inexpensive books and a monthly magazine available that include programs and modules for accomplishing specific tasks, learning to use Comal is no more difficult than learning BASIC. In fact, in some ways it is easier, because the authors also market tutorial disks to help Comal owners to do programming. And all the programs in the monthly newsletter are available on disk. (See accompanying table for pricing.)

The Comal Starter Kit comes with a 24 page information booklet, 8 newsletters, an index to the newsletters, the current issue of the newsletter, Comal A to Z book, an educational programming workbook, tutorial disk, auto run demo, programmer's paradise disk with some useful sample programs, Best of Comal disk (with more sample programs), a sampler (with yet more sample programs), C128 CP/M demo disk, quick guide. For $29.95, that's a lot of stuff.

The CP/M version is a little different from the C64 system. With CP/M Comal you can buy a RunTime compiler that lets you turn your Comal dependent programs into runnable .COM files. The RunTime module is an extra $19.95. If you plan to sell or give away your programs you'll need this module. Otherwise the $49.95 CP/M Comal should be satisfactory. CP/M Comal also runs on the Epson QX 10 and Geneva computers.

Also, Comal is a good language for beginning computer users to learn. It is similar to Pascal, but uses very English-language type command words. Many of the commands resemble BASIC's commands, so those who already program in BASIC have at least a rudimentary starting point. Comal also has LOGO-like turtle graphics commands, so LOGO programmers will also feel at home with it.

Support for Comal is available on Quantumlink. Captain C (Len Lindsay) moderates a Comal meeting on the second Thursday of each month. There is also a Comal message board, where members can leave questions and comments for Captain Comal or other Comal users. The CP/M Comal demo system is also available on Quantumlink, for those who would like to try it before buying. The demo will do everything but Save and Enter, so you should be able to get some idea of how the package works. The demo is also available on disk for $5.

Because it is partially aimed at beginning programmers, Comal makes an excellent language for school systems. And, recognizing that school budgets are limited, the Comal Users Group offers rates and licensing fees for teachers and schools.

Comal is available in C64, C128 and C128 CP/M versions. The C64 and C128 native mode versions are also available on cartridge which speeds development time a bit. The cartridge versions are quite a bit more expensive since they include hardware.

And since the authors market versions for the Apple II family and the IBM PC, programs written for the C128 will be portable to other computers. (I'm told there may even be Mac and Amiga versions of Comal by fall, but they still remain to be seen.) The fancy IBM version is only (ack!) $595.

Expand To Include Other Machines?

Again this month I received several letters. One asks a question I have addressed before. Melvin Vincent wrote to ask whether or not I have considered expanding my column to include the entire CP/M community instead of just C128 owners. He said that while he reads the column every month, he is frequently disappointed that there isn't

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ATARI

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the "expensive" model in the Atari lineup.

Those products: Everybody at Atari swears that all the currently announced products are in production and should be available "by the time you read this." That list includes: the $669 PC Clone (with mono monitor), the $99 RS-232 Hayes Compatible 1200 baud modem (with separately sold 8-bit adapter), the Mega-ST machines (with built in blitter), the $1,500 laser printer, the $80 80-column adaptor/printer interface for the 8-bit computer line, the $150 "XE System" game adaptation of the XE computer, and a new product announced at the Chicago Consumer Electronics Show in June: a new $199 5.25" disk drive to replace the venerable Atari 1050. Discussions at the CES revealed more than a little hedging on a few products, the disk drive and the laser printer in particular being likely to be available "late summer" or maybe even later. Atariwriter Plus 80 is also reported not ready for shipment, which may slow interest in the XEP80 80 column adapter for the 8-bit Ataris. Still, it looks pretty clear that things will actually move soon, and Atari dealers are starting to breath again.

The new XF551 disk drive is a sleek new gray box about ½ the size of the 1050 it will replace, and is actually styled more to match the PC Clone than the XE. That's not surprising, as the same drive unit is used in the clone. It will be almost 360K, using a true double-sided double-density disk format, plus a modified system that will almost triple the read/write speed. It will be shipped with "ADOS," a new disk operating system from OSS Inc., the people that brought you DOSXL, BASIC XE, Action, etc. ADOS will be able to read DOS 2 and the alien "density-and-a-half" of DOS 2.5 as well as its own disks, but will not be backwards-compatible. ADOS should be usable in older Atari compatible drives, and may be marketed separately as well. Features include subdirectories and optional menus. It sounds a lot like SpartaDOS from ICD Corp.

Although it is scheduled for summer release, Neil Harris and other Atari officials admitted that the XF551 was having some trouble being fully compatible with some disk protection schemes in common useage, and might be delayed some time to work it and other points out. The new drive eliminates both the 1050 and any plans for a 3.5" 8-bit disk drive, heavily rumored for the last nine months.

Already, the new drive has triggered speculation of interchangeability with the ST. Since the XF551 is basically a PC external drive already, hopes are being voiced that the Atari PC and the ST will have interchangeable drives, allowing access to 5.25" disks (as in PC emulation) for the ST, and to 3.25" ST drives for the PC. Neil Harris, head of Atari product information, confirmed that the interfaces were to be identical, and "mix and match" would be very possible, depending perhaps on your DOS. HopeHopeHope.

OSS also has a new Toolkit for BASIC XL, adding all the power of BASIC XE except the Extended Program Area. The new extensions file for BASIC XL will include those amazing add-ons like SortUp and SortDown, to name a few. By the way, OSS also says no runtime package for BASIC XE will be released, so don't expect too many "extended" PD gems to surface.

Did I Say Emulation? A new software-only IBM Emulator has been released that claims 99.95% compatibility with MSDOS programs, and a 80% execution speed on the ST. It's called PC:Ditto, and people are already raving about it. For $80, the program may be all anyone really needs in the way of Big Blue operation on their ST. Reviews are universally glowing. Contact Avant Garde Systems, 381 Pablo Point Drive, Jacksonville, FL 32225. Rumor is that the same company will put out a $350 hardware external IBM emulator in a few months!

Also new in PC emulation: HAPPY version 7.1! New software is/has been shipped to registered HAPPY owners. Yes, the same modification that has allowed thousands of Atari users to make "backups" of copy protected software, as well as adding true double density and ultra-fast speed to the Atari 1050 disk drive now allows you to Read And Write MSDOS disks. It won't make programs run on the other machine, but data files (like word processing and program code for editing) port perfectly onto single sided formatted IBM disks. Atari end-of-line to ASCII carriage return/linefeed translation is an option. You can't format in MSDOS on the HAPPY, nor read or write double-sided disks, but that's only a small hindrance. I now can take work to and from the office, and watch the reactions when my co-workers ask what model IBM I have at home... Oh, yes HAPPY software version 7.1 also allows many more types of copy protected disks to be copied without needing a "runtime HAPPY," meaning that they are true copies, not translations as in the version 7. Contact HAPPY Computers, Box 1268, Morgan Hill, CA, 95037, or call (408) 779-3830.

HAPPY for the ST? Yes, but not yet. Word has it that a Cart version of a HAPPY software package will be released for the ST that will allow a "photocopy" of any disk...Any Disk ...Any Format...to be made in an ST. Yes, Amiga, PC, anything. Sounds interesting! Just more proof that the Atari is the machine that can be anything if it tries!

More emulator news: The "ST Transformer" Atari 8-bit emulator for the ST that you read about here in *Computer Shopper* will shortly be published by *Analog Magazine*. Scheduled for August or September printing, Darek Mihocka's emulator will be free for distribution, and will include documented source code in hopes of further enhancements by other programmers. It appears that the "print" version will not have player-missile graphics included because of too many bugs in those routines. Darek expects that to be one of the first revisions after the original release. Atari finally decided to work out their copyright objections after mail from user groups all over the country, protesting Atari's blockage of the project, started arriving daily at Atari.

I was told that just after the first *Computer Shopper* article ran, further publicizing the roadblock, the increase in user group mail made Sam Tramiel tell Neil Harris to resolve the matter. See? User groups can make a difference!

Although the ST Transformer issue may be resolved, there seems a growing attitude at Atari that the User might be the enemy. Neil Harris, Atari's main product man, referred to the several user groups pushing for the 8-bit emulator as "trouble makers," called Darek Mihocka a "Twerp," "a pain in the A**," and a "lousy programmer" during his speaking engagement with the Chicago area user groups during the CES. He has also accused users of "viciousness" in messages on Genie telecommunication system when they questioned Atari's delivery on product promises. Lets hope this attitude is specific to Neil, and that his recent vacation has brightened his outlook. After all, we all want the same thing: the best performance out of our Atari.

Another coup for user groups: Springboard Software, makers of Newsroom, Certificate Maker, etc. for almost everybody but Atari, has decided to rethink their position and is prepping an 8-bit Atari version of Newsroom, slated for fall release. A letter writing campaign was initiated by several user groups and carried forward by *Antic Magazine*. ST versions of all Springboard products are either already being shipped or are being developed.

MindScape Software, makers of some remarkable software for the ST, has bought out CBS Software and has rereleased some titles from the CBS collection. Plutos, a fabulous MindScape arcade game for the ST, is now legitimately released and features "lots of" enhancements over the pirate beta version that has been floating around BBSs as a "public domain" item. Many clubs put the game in their software libraries, not knowing it was not PD.

Another illicit Beta copy—this time of a Star Trek Game for the ST—floated by an East Coast reviewer. It is a full featured graphic adventure, with digitized music and dialog. A rave preview, with Simon and Shcuster slated to release the real thing in the fall.

The Buffalo Atarifest at the end of April was down in attendance and vendors, according to reports from attending user groups. Organizers are upset with Atari over misplaced, error filled ads and promised but not delivered money. The sponsors (Western New York Atari User Group and others) were forced to give free admits to 12-and-unders as a result of Atari's ad. It seems whoever placed the ads (at Atari) didn't bother to check the copy and simply reused someone else's ad. WNYAG figures their losses at $500 as a result. $4,000 promised from Atari also hadn't arrived when last I talked with organizers, long after the show.

Atari's "promise without performance" of money for support is what made Detroit first cancel their Atarifest. The "Magic" club in Detroit will have a Detroit Atarifest in August, even though the Chicago fest, scheduled for July 25-26, was cancelled (postponed?). The Detroit Atarimagic show will be a three-day event, August 28-30 in the Southfield Hilton just outside Detroit proper. Call (313) 751-8291 for details.

I told you last time that Atari is making big strides on GEnie, a telecomputing service similar to Compuserve. Neil Harris and others from Atari make appearances regularly in the message bases and in a weekly round table open discussion on Wednesday and Thursday nights. Atari users are invited to get an $18 saving on normal registration on GEnie by calling (with their modem) 1-800-638-8369, and entering HHH upon connection. At the U# = prompt, enter XJM11887, Atari and press return. The voice number I gave you before got you to people that either didn't know about the offer or were not allowed to tell you about it. The offer runs through the end of 1987.

First it was Atari Planetarium, now, Autoduel, a new game from Origin Systems, is said not to run on Indus or ICD Doubler equipped Atari 1050 disk drives due to a new copy protection scheme. More and more, these are turning into use protection schemes. Hardware-specific software is a growing trend—be sure you get a return priviledge from a reputable dealer to protect yourself.

In a related item, Dataperfect from LJK won't work with ICD's MIO interface box...unless you send it in for an update. For $30 LJK will send you a new version of the fine database program. The sum and total of the update is that it no longer requires a translator disk to use the print option. No additional work has been done, for instance, to make use of enhanced memory. The problem with the MIO is that access to the Expansion Buss disappears when the translater is run, cutting the MIO and its printer interface out of your system. A lot to pay for a little item, the update of Dataperfect is nonetheless available from LJK Enterprises, Inc., 1351 Yves, Manchester, Missouri 63011-3669; (314) 527-6909.

ICD has launched a new line of hard drives for the 8-bit and the ST, their first venture into the 16-bit market. Competitively priced at about $650 for a 20 meg, it includes an internal clock and ports to control additional "bare" hard drives. There will be one unit for use with the MIO (and also Macintosh!!), and another styled to sit slimly under the ST monitor with room inside for two hard drives. Additionally, ICD has or will shortly ship FastBack for the 8-bit Atari, a very fast, menu driven backup system for any size hard drive. It will maximize floppy storage and can backup files that are bigger than a single floppy. It will also be able to make use of an "archive bit" which will be set by the new SpartaDOS-X DOS-on-a-cart, still due out this summer. This will allow you to run Flashback and only files written or updated since the last backup will be copied, substantially reducing time and effort. ICD's Tom Harker also mentioned a new SpartaDOS Tools disk for the 8-bit line, including many hard drive and crash recovery utilities, plus lots of other items like reassignable console function keys, etc. Call ICD at (815) 968-2228.

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Format, generated by Lotus 1-2-3, Visicalc, and others.

CSV files: Comma Separated Values, generated by Supercalc, dBase II, dBase III and others.

PRN files: Readable text document, generated by many programs for output to the screen or printer.

WKS files: Worksheet document, generated by Lotus 1-2-3.

The GEM Graph manual provides a suggested reading list of books that can be used to broaden one's knowledge on symbols, charts and diagrams, and visual displays.

GEM WordChart

Most presentations that I've attended include not only the usual gallery of monolithic charts and a smattering of art, but those pages full of bold headlines that create an agenda or dramatize a point. WordChart provides you with the tools to add "punch" to presentations. It's like having an electronic composing room at your fingertips.

WordChart lets you work in two formats: a vertical 8.5x11 format called the Portrait (?), and a horizontal format called the Landscape (?). It has some of the attributes that Newsroom, Printshop and Signmaker have, but it has more freedom in terms of layout design. But more importantly, perhaps, is that it is another tool that integrates with all other programs in the GEM environment.

After you write your copy and have a rough image in your mind as to what it should look like, you can select from two type fonts (Swiss and Dutch), which can be selected as Normal (they mean Roman), Bold, Italic or underlined. Type is available in 14, 20, 28, 36 and 72 point sizes.

Several templates are included that can guide you in establishing a uniform relationship to all the presentation copy you will be preparing. These establish a headline, a sub-headline, a text section, and a footnote area. There are also several that have columns and rows of various configurations so that you can enter specific data or figures. These text fields can be emphasized with a variety of designs that include circles, squares, arrowheads, check marks and dashes, all of which are available from the toolkit either in outline or solid form. Or they can be numbered with Arabic or Roman numerals, or with letters.

If the proportions of any lines of text that you have entered don't appeal to you, you can easily "click" on a different size type or type face. Any emphasized symbols that precede these lines will be automatically scaled up or down accordingly.

You can add color to your text. You can take your saved file and throw it into GEM Draw to create borders or other artistic doodads, such as drawing boxes around key words or throwing a tint block behind a section to liven it up. You can also import graphic files from the GEM Business Draw Business Library, or combine what you have created with a chart in GEM Graph. Words and lines can be positioned left, right or centered. You can throw in organization charts that can be created through the combined features of WordChart, Draw and the Draw Business Library.

What you prepare on screen can be reproduced quite accurately by most printers (dot matrix, laser or jet-ink). Plotters have certain limitations. Each picture or wordchart is made up of a number of elements: circles, squares, lines of text, etc. A plotter always draws each element completely. This can produce problems. Let's say you want red text in a blue square. Because a plotter draws the entire blue square (it doesn't leave out the area to be occupied by the text), the red ink of the text goes directly on top of the blue, rather than in place of it.

A plotter can only reproduce solid fill, cross hatching and vertical, horizontal, and diagonal line fills; it cannot reprodce the other fill patterns available in an application like GEM Draw. A plotter doesn't pick up a pen when asked for color 0 (zero). As a result, you can't produce the white text on dark background that you can with a printer.

Finally, the GEM "plotter drivers" (the special programs by which GEM Output transmits data to your plotter) do not include fonts. Most plotters include fonts as part of their internal software, but these fonts might not match what you see on screen.

The wide range of editing commands that are available on the other GEM programs are part of WordChart, too. WordChart isn't something that most of us will use as regularly as a word processor or a painting program. But when you need a colorful poster, a window announcement, a cover page, presentation material, or other similar display material, WordChart can produce it for you almost as quickly as you can type.

The tutorial in the WordChart manual will teach you all the basics of using the program in less than a half-hour. Learning the exotic stuff such as importing borders and artwork from other programs will be an on-going education, because your personal creative input will enhance the finished product. If you've ever worked in layout design, you'll know that type can be as interesting and dramatic as a picture.

GEM Graph has a list price of $250. GEM WordChart lists for $150.

The GEM Packages

It just occurred to me that I have neglected to mention the packaging of the GEM series. All the major programs are

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Computer Book List continued from page 352

tion, with many examples of what you can expect when you first log on to a particular database and how to respond. Other titles by the same author include: *How To Get Free Software* ($14.95) & *The Complete Handbook of Personal Computer Communications* ($14.95).

Peter Norton's Assembly Language Book For The IBM PC
Peter Norton
Brady
$19.95
Copyright: 1987

Peter Norton makes complex technical material understandable to the lay person as he teaches the underlying principles of assembly language to beginning programmers. For BASIC programmers wanting to move on to assembly language, Peter Norton displays his flair for making complex technical material understandable.

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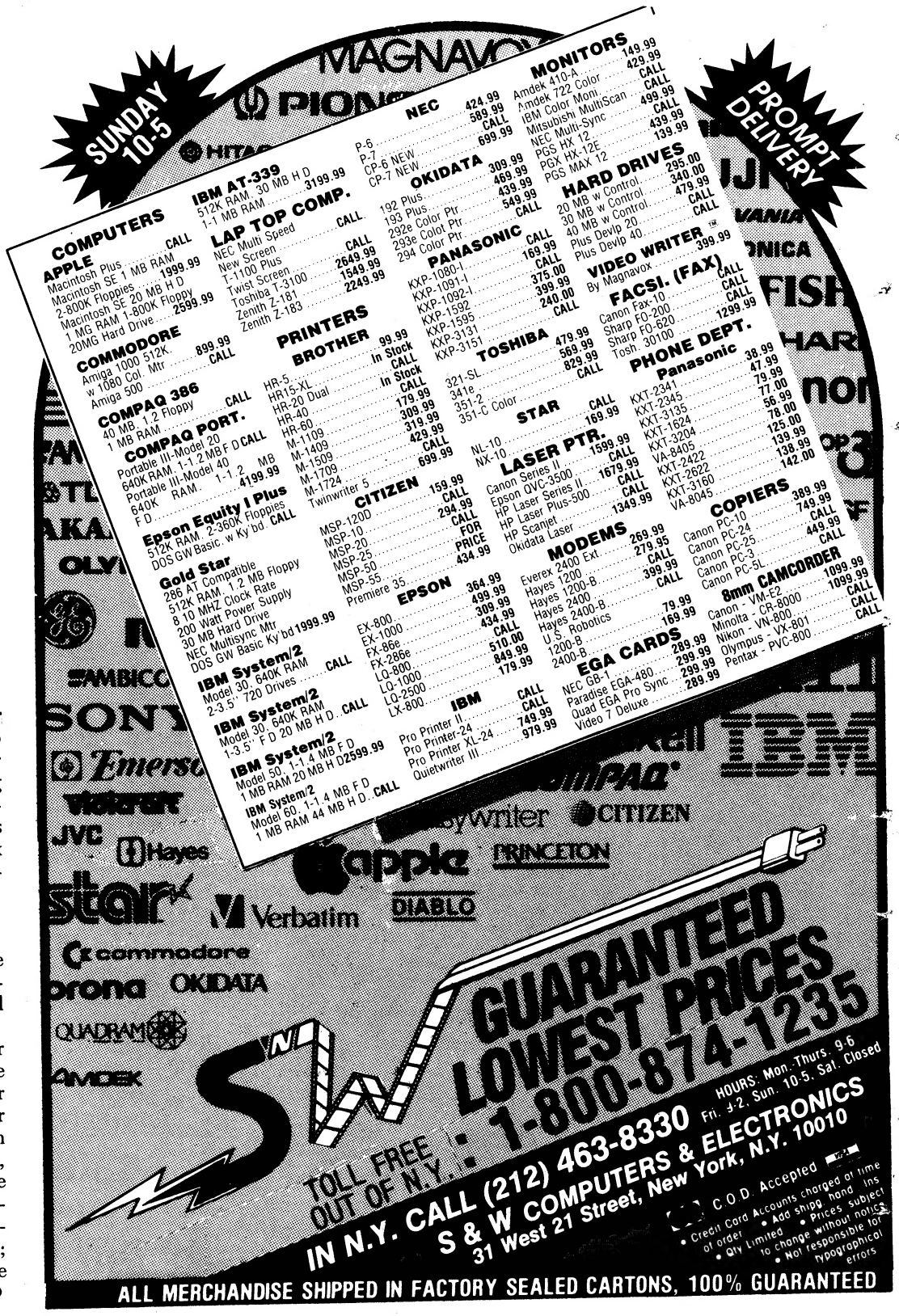

Terminal Software
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guage, or CP/M. If you are using the Commodore 128, or any other multi-processor equipment, then consider the computer's native processing mode that you want to be working under; for example, Commodore BASIC or CP/M. If you are interested in the vast CP/M public-domain software pool, then your terminal program should be one that is CP/M based. (While in C.128 BASIC, you cannot even look at a CP/M disk directory very easily; or vice versa.) The best solution would be to have at least one CP/M terminal program, and another one that operates under BASIC.

3. Documentation! Be certain to get any instruction or documentation files that go with your main terminal program, especially if it comes from the public domain. And don't forget any companion machine language (ml) modules that might be required.

4. Special Use requirements will not be emphasized here. This includes unique or one-of-a-kind types of applications; for example—the graphics oriented, C.64-mode only environment of QuantumLink (or Q-Link). Just use the special software they provide and be done with it.

5. Initial Recognition on a BBS. Finally, just in case you don't know it... when you call any bulletin board system (BBS), after you have their tone, you must signal that you are out there and ready. Do this by hitting the <RETURN> key at least once; sometimes two or more times are necessary. Why? The very first thing that a good remote system does is look for your <RETURN> key code (the CHR$(13)). Using just that tidbit of information, it can adjust it's own baud rate and other communications settings to match yours. Instant (almost) compatability! And now you're "on-line," ready to talk to each other. (See...DUPLEX...below for more about BBSs.)

Features of Terminal Programs:

! Operating Modes—at least two, each easily accessable at any time.

Virtually all terminal software packages offer two operating modes, commonly called Command and Terminal. Command mode involves your end only, and doesn't require the "other" computer that you are, or will be, talking to. For instance, you would look at a disk directory (to check space, to look for a particular program or file, etc.), or dump your screen to your printer from the Command mode. Sometimes called Local mode, also.

Terminal mode is the one that actually communicates through your modem to that other computer. The other computer may or may not have a human-being operator. it may be an automatic, or "remote", system that is operating under it's own master control program. By the way, such an unattended system is often referred to as the "Host" computer, especially when it has a large public domain library that you have access to.

! Uploading/Downloading Capability using Standard Protocols.

Uploading (you send a program) and Downloading (you receive a program)—be it a program, sequential file, or whatever.

!Protocols are the special ways that programs are uploaded and downloaded. Very particular sets of rules, or "protocols", have been established in order to transfer information between computers. The primary purpose is to minimize the possibility of errors during transmission. Telephone lines sometimes are "noisy," and might otherwise garble the normal modem sounds. Some of these rule sets have been enhanced in other ways also; such as the ability to send multiple files, schemes to make the transfer more efficient (usually faster), etc.

Protocols carry their own names: Xmodem (older versions are called Modem7),

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DataTrieve
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excells. Since doing TextPro, Abacus has learned its lesson on making its manuals and programs user-friendly, and has come up with a first rate package of documentation, tutorials, and usable templates. Haba, on the other hand, gives the user a skimpy manual and one thin example. DataTrieve's package is a classic example of consumer orientation. It is written as if you just bought your first computer and want quick results now, and power later.

While admittedly I spend a lot of time on computers, I am not a regular and experienced user of databases. Like many of you, I do need to get more organized, so there is a need for a good database in my life. As a cop I know I should have a good home inventory list, but have never gotten around to it. I need to get model and serial numbers down before I become Joe Victim and have mud on my face for not having this information for the investigators and insurance company.

Having lived all over, I have friends scattered around, and should have their addresses and phone numbers logged somewhere, but my list is no list but rather bits and scraps of paper scattered throughout my house. An address list would be great.

To keep up my warranty, an auto maintenance log would be great. Again, scattered scraps of paper.

Finally, a list of expenditures might help me at tax time.

The point is, I need a database in my life, and I'm too busy to work too hard at it.

It is at this point that DataTrieve in particular shines. With a minimal of reading the clearly-written and extensive manual, and a little fiddling and diddling with the tutorial examples, you can be off and running with the program, with a number of good templates already ready for you to put the information in.

DataTrieve supplies templates for Home Inventory, Addresses, Auto Maintenance, Recipes, Stamp, and Coin Collections. While you will have more uses for a database, all of us can use the Home Inventory and Address templates, and by using these, we get a good enough feel for the program that we can then confidently set up some of our own databases.

While HabaView's documentation and examples suffer in comparison to DataTrieve's, it is nonetheless easy to use and quite useful. Without benefit of the templates, you can set up the same basic templates in short order. What you miss is the font and color choices offered by DataTrieve, and all the Gem bells and whistles, which, by the way is a case of seeing is believing with respect to DataTrieve.

To use the hamburger analogy, Haba puts out a basic Quarter Pounder, while Abacus lets you have it your way.

Both products get the job done, within their respective limitations, and either would be a good choice for home use.

Both suffer from copy protection, and I think this is particularly important when it comes to databases. I, for one, would like to keep a copy of the program and a particular database on one disk, and with the double-sided disks, this would be quite feasible for most applications if copy protection weren't around. I also want ready access to my files, and fear that a power outage at the wrong time will ruin my program disk.

I was able to copy HabaView with CopyII ST, but DataTrieve was uncrackable. I'd pay good bucks for a non-protected version.

In the final analysis, choice is a matter here of intrinsics, like noses aesthetic in nature.

It should be noted that there are other offerings in the marketplace, and Timework's DataManager ST in particular deserves a good look, as does the GEM version of V.I.P. Professional if you're considering heavy-duty database work. The good news is you can't really go wrong if you choose one of these programs. ●

Facets of GEM
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packed inside a handsomely illustrated boxed slip case. Another half-size box fits inside the slip case so that when you pull it out and stand it on its side, all the manuals and disks don't fall over your desk. The trick, though, is to get the small box out of the slip case. They fit together too snuggly, and for some odd reason, the outer slip case doesn't have a thumb-grip cutout to facilitate the removal of the contents.

There are separate manuals for Desktop and the application program contained in each package. These are wire bound, which means they'll lie flat when open. You can even fold them back. The only exception to this is the WordChart package which has perfect bound manuals. The text layout is clean and easy to read. Each manual is profusely illustrated with examples of the working screens, the pull-down menus and the icons, all of which have been produced by the drawing and graphic programs in the series. They have a list of contents and a detailed index at the end. The disks are in sealed envelopes.

Software registration cards are bound into the manual, as well as an evaluation card. Also included is a two-part Software Performance Report that you can fill out if you have any specific problems with a program. I completed two of them and sent them in, knowing I had deliberately goofed up a couple of Desktop disks during the installation process. I received replies in less than 10 days correctly diagnosing my problem. I also called their technical support group on several occasions with questions. I had no problems getting through, except once when all lines were busy. They called me back within an hour. I haven't always been this successful with other software publishers.

In part 4 we will play with GEM Draw Plus, the enhanced version of GEM Draw that has just been released, which has a host of features that are quite new to graphic programs.

For further information, please contact: Digital Research, 1860 Embarcadero Road, Palo Alto, CA 94303; (415) 856-4343. ●

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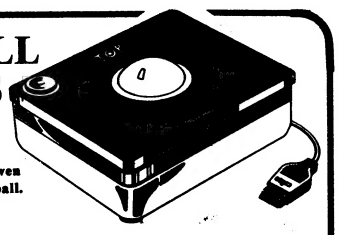

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Applying The Atari

by Jeff Brenner

As the summer draws to a close and the sounds, sights and smells of September fill the air, we'll take a breather this month from the typing-nightmare listings that have been appearing in the column. Instead, we'll answer some of the reader mail and we'll look at a couple of newsletters in the mail this month. Rest assured, we will be faced with more typing challenges in the near future, but I'll certainly make an effort to include more shorter and simpler programs, for those of you with less typing stamina.

Newsletters

In the mail this month comes the Acorn Kernel, the newsletter of the Atari Computer Owners of Rochester, New York (P.O. Box 236761, Rochester, NY 14692). The June issue contains articles on the XM301 modem, a brief Atari computer glossary, an article on Atari BASIC, news and an ST section.

The Michigan Atari Magazine (P.O. Box 16132, Lansing, MI 48901) is the newsletter of the Capitol Hill Atari Owners Society, the Tri-City Atari Group, the Genesee Atari Group, the Battle Creek Atari User Group, the Grand Rapids Atari Systems Supporters, the Greater Kalamazoo Atari Users Group, and Washtenaw Atari Users Group. The June issue contains sections for each of the member groups, Atari news, ST notes, reviews of Rambrandt, Koronis Rift, the XEP80 80-column card, and ST software reviews.

Credit Where Credit Is Due

In the July 1987 column I printed the Southside Tidewater Atari Technical Users Society's (STATUS) offer to supply readers with copies of various memory expansion articles. In that column I listed the titles of the articles that STATUS had sent to me, along with the name of the author that appeared on each article. However, I should also have included on that list an article by David G. Byrd entitled "The Atari 800-Plus 256K," which describes how to expand the Atari 800 to 288K. I will be sending STATUS a copy of this article so that they may add it to their collection.

Reader Mail

Dear Jeff,

Could you please tell me if there are ways to make 5200 or 2600 cartridges work on my 800XL? Also, someone said that it is very possible to do but it is a form of piracy? Is it?

David DiBartolomeo
Merrimac, Massachusetts

The Atari 2600 cartridges are not compatible with the 800/XL/XE machines since the graphics circuitry and other hardware registers are different on the 2600 than on the 800/XL/XE. The 5200, however, contains comparable circuitry to the 800/XL/XE but the 5200 cartridge port was intentionally made incompatible with 800/XL/XE. It should theoretically be possible to get a 5200 program to work on the 800/XL/XE but I have not heard from anyone who has done it. Would it be piracy? As long as the program code is not copied, or in any way transferred in such a way that it is duplicated, I don't see how running a 5200 program on your XL would be piracy. Of course, if any readers hold a different opinion, I would be interested in hearing it.

Dear Jeff,

First I should refresh your memory. I am the person who sent you a letter asking if ROM chip Rev. B on the motherboard is both pin compatible and electrically compatible with ROM chip Rev. C in the cartridge. I carried out my intended project which consisted of replacing Rev. B on the motherboard with Rev. C which was in a cartridge. I am pleased to say that I did it, and it worked!

Since you printed my original question in your column, I thought your readers would be interested to hear how I determined that Rev. B on the motherboard and Rev. C in the cartridge are compatible. But first I want to explain why I don't like Rev. C in cartridge form. The first reason is that if Rev. C is in cartridge form and is always left in the port, little children may become curious about it. As a result, they might remove it when the computer is off and when no one is watching. Although children are not strong, they are creative and can easily damage it by playing with it. The second reason is that if there is a BASIC program running and BASIC is in cartridge form, no matter how many times you tell people not to touch the cartridge, there will always be one person who will become curious and touch it, perhaps even disconnect it. Instead of gambling on the safety of the cartridge, one should be sure by putting Rev. C on the motherboard.

In your column, you state that since either Rev. B or Rev. C can be plugged into the cartridge port, they probably are compatible. Your statement applies to compatibility only among cartidges. I had to be sure that ROM chips made for the motherboard are completely compatible with ROM chips made for cartridges. At the time I was attempting to determine compatibility, I thought it was possible that the two were different. What follows is a summary of how I determined that Rev. B on the motherboard is compatible with Rev. C in the cartridge.

To start I simply removed from a cartridge a Space Invaders ROM which was mounted on a socket. I then opened my 800XL and removed from the motherboard at position U4 the BASIC Rev. B ROM, which for my computer was also mounted on a socket. In its place I inserted the Space Invaders ROM, and turned on the computer. Since the Space Invaders game was

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Sinclair Survival

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uct and then support it to the hilt they will not put it out at all.

For more information contact Novelsoft, 33 Skelton St, Toronto, Ontario M8V 3W3m Canada; (416) 259-8682, Compuserve 70416,1435).

Next month we will have a look at two more programs from Novelsoft—The Worx, a desktop organizer, and Timemachine, a BASIC compiler.

Just as I was completing this month's column, I found out about preliminary announcements of two upcoming T/S events. A T/S Mini-Fair is being planned for September in the great northwest. For information contact Rod Gowen, 1419 ½ 7th Street, Oregon City, OR 97405;(503) 655-7484.

Now on the planning boards for the second week of June, 1988 is the Silicon Valley T/S Fest to be held either in San Mateo or San Jose, CA. More information may be had by contacting Norm Lehfeldt, 757 Guerrero St., San Francisco, CA 94110.

As I receive more information I will pass it along here. ●

AGE	KNOWN	AFFORD	RESPONSE
I	F	T	I suggest a baby accessory (crib, etc)
I	F	F	I suggest toys or clothes
I	T		I suggest toys or clothes
I	F		I suggest toys or clothes
C	F		(If hobby known) I suggest something for the hobby
C	F		(If no hobby) I suggest a book, game, clothes, daytrip or candy
C	T		I suggest games, clothes, a daytrip or candy
C	F		I suggest a daytrip or candy
T	F		(If hobby known) I suggest a hobby accessory
T	F		(If no hobby) Clothes, tickets, game, jewelry, personal accessories, record
T	T		Gift item (mug..), jewelry, accessories, game, gift voucher
T(M)	F		I suggest food
T(N)	F		I suggest flowers (or a plant) or food
A	F		(With hobby) I suggest a hobby accessory/book/memento
A	F		(No hobby;H) I suggest a vase, a statue, a tablecloth, etc.
A	F		(No hobby;N) I suggest jewelry, fine food, or tickets
A	T		(H) I suggest a vase, a statue, a tablecloth
A(M)	T		(N) I suggest fine food (dinner, etc.)
A(N)	T		(N) I suggest flowers or dinner or..both!
A(M)	F		I suggest fine food
A(N)	F		I suggest flowers (or a plant) or fine food

Apples for Education
continued from page 62

screen is not going to be something of interest to them if you're trying to model animals. And I also claim that canned sequences, on CD-ROM or some other sort of storage, pre-shot sequences, are just not going to cut it with this kind of application. So here's what we're using [rolls a new videotape]. We're using some real-time flight simulators built by Evans and Sutherland. Sixty frames a second, multiple points of view, and a real pilot is flying the plane here. This is the kind of thing that we can't do with pre-canned sequences."

"To give you an idea of the scene detail capability take a look at the leaves on the trees, the textures of the skies. This system is capable of handling as many as six independent cameras, so you can look at six independent points of view simultaneously in this world. That's really equivalent in some ways to the wonderful old machines that Ivan Sutherland did Sketchpad on."

"Of course we weren't that interested in Harrier Jump Jets. So a couple of months ago we took our Disney animators and went off to Utah to try to do a thousand miles of Australian Barrier Reef. And some swimming things. [new videotape] Disney animators have a way of turning everything into a character—and one of the things that never have been done in real-time graphics is to get sinuous motion. So we had to do a lot of modeling of fishtails. And the scanning [shark's] eye. And after one long weekend with lots of cold pizza, here's what we came up with.

[Animated sharks swim through the flora and fauna of a barrier reef.]

"I think we were all pleasantly surprised by the RCA announcement [Digital Video Interactive]—well maybe not all of us were pleasantly surprised by the RCA announcement—but one of the messages to get from that is that they were able to put a 12 MIPS [million instructions per second] processor on a single chip, and in fact over the next few years, the graphics here, which take about 100 MIPS or so to do in real-time, will actually be able to be put on [circuit] boards."

"And so after all of these years, the two worlds of simulation and of media access, are going to come together."

"One of the things that we are doing in this project is that after the children have been able to successfully do their own fish, they're going to find an underwater cave, and in there will be an iconically organized database, designed by Stewart Brand of the Whole Earth Catalog, and Richard Werman of Access Press, that's going to have all the things that the children need to survive in school. And their fish are then going to be their agents. They will have learned how to make an artificially intelligent mentality that can cope in complex environments."

"And that is one of the ways we plan on learning with agents. And that database, for the iconic cave, the Cave of Knowledge, is going to be stored on CD-ROM."

"But none of these technologies are central. What's central is the notion of the computer as something much more than any medium has been before. You know the Greeks held that the visual arts were the imitation of life. But the computer arts are the imitation of creation itself. Cesare Pavese, the Italian philosopher, once said, "To know the world, one must construct it." But to construct it dynamically, especially for children, will require all the technology, ingenuity, and aesthetics that we can muster." ●

Whatever Happened
continued from page 393

department chairman or a secretary demands more micros, they will eventually be served, and the broader vision will define itself...

Could it be that the "big-computer-big-institution" approach was already outdated? That moves in that direction were anachronistic. The micro is essentially a personal tool and is curving out a major role for itself along unanticipated lines. It appears that various programs, not only in higher education, but also in business and industry, are not faltering, but in fact are discovering their proper uses as they go along. In a deeper sense, computerization is succeeding, but in a variety of unanticipated ways! We cannot control the real learning curve; and the academic universe is gradually learning to go with the flow...

The college campus is not only the cockpit of learning and research for its denizens, it is also the bellwether of the larger industrial market. It is a place of freedom, experimentation and discovery, and all those of the 9-to-5 real world absorb the lessons learned there. In short, the college campus is the best promotional tool invented for future and long term sales of all kinds of products, and a place for new software and software users to come of age... ●

Video Title Shop And Graphics Companion I

IntelliCreations Inc. has announced the release of the long awaited Video Title Shop for the Commodore 64 and 128 systems. The Atari XL/XE and Apple II versions of the product are expected to be released soon.

Video Title Shop brings any video performance to life through your computer and VCR to create title and graphics effects never before available in such an inexpensive, easy-to-use program. Create text, design borders and graphics screens on your computer that can then be recorded to videotape to spice up home videos of special occasions, as well as school or business presentation. Whenever a presentation needs pizzaz, Video Title Shop makes it shine!

The program includes special features to add flair to presentations, such as fades, wipes, fizzles, scrolling and cycling between screens. Choose from an array of font styles and sizes, import graphics by using Micropainter Plus (included in Video Title Shop) for use as title backgrounds, and superimpose text and special effects over your graphic creations. You can chain different screens together, a different effect on each, to design full length title sequences.

Video Title Shop is versatile and refreshingly easy to use. Information bars prompt you or provide information on the sequences you are creating. However, no cursors or prompts remain on the completed screen—only what the user has created. You can also learn from an introductory demonstration with all major features shown on-screen included in the program.

For those users with an artistic bent, Micropainter Plus allows control of when and where art pens and colors are used. You can select from four different pens and 16 colors to create your original works of art. You will also be able to load in canvasses created with several other compatible paint programs.

For users not wishing to take the time to create their own graphic canvasses, Graphics Companion I, which is being released simultaneously with Video Title Shop, provides 25 pre-designed screens covering all major holidays, such as Christmas, Easter, Valentine's Day, etc., as well as screens for special occasions, including birthdays, weddings, graduation and family vacations. These screens can be modified by the user and space is provided for text to be inserted with Video Title Shop. Five decorative borders are also included on the disk and these can be used in conjunction with the 25 pre-designed screens. Both Video Title Shop and Graphics Companion I allow the user to save their screens to disk for later use. Additional Graphics Companion disks are being planned for scholastic, business and home use.

Video Title Shop has a suggested retail price of $29.95; Graphics Companion I is priced at $19.95.

For more information contact IntelliCreations Inc. at 19808 Nordhoff Place, Chatsworth, CA 91311; (818) 886-5922. ●

Applying The Atari
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working, I knew that the two were compatible. I decided to test for compatibility with a Space Invaders ROM because if the two ROMs were not compatible, the inserted ROM might have been destroyed. It didn't matter to me if the Space Invaders ROM was ruined.

Since the Rev. C ROM in the cartridge was soldered to the small PC board, I had to desolder it. Although I won't describe in detail the desoldering technique I used, I'll just say I used a tool that had both a heating iron and vacuum pump. I also used component cooler. After the Rev. C ROM was desoldered, it was not a simple case of inserting it into position U4 on the motherboard. I still had another check to perform.

If you examine a cartridge

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Upgrades Are For Everybody

by Gary Ferris with John Nagy

A great deal of attention has been focused recently on the large number of Atari computer memory upgrades. This article is not intended to deal with the technical aspects of the various upgrades, but will try to point out the reasons why you should consider any particular memory upgrade.

The most common usage of extended memory is as a simulated disk drive, commonly called a RAMdisk. The advantage of this usage is its incredible speed. Its main disadvantage is that the contents are lost when the machine is turned off unless first transferred to a real disk drive. Many additional uses (such as the fabulous BASIC XE from OSS, Inc.) are continuing to surface as extended memory becomes commonplace.

Long before the XL series of computers hit the scene, there were several options available to Atari 800 owners for additional memory. Axlon was one of several, and many early applications programs (like SynFile and SynCalc) were written to use the extended memory available from this system. The modification was very easy (replacing one of the plug-in memory boards) but usually cost several hundred dollars for each increment in memory size. Some of these original boards (or new designs based on them) are still available today, and the price still tends to be much higher per K than any of the other system upgrades.

However, thanks to the inventive spirit of Atari owners, David Byrd created the plans for the "800 Plus 288K

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Teaching & Learning continued from page 64

can become something more serious and impenetrable.

But on the realtime computer screen, the teacher's emendations become part of each student's finished work, or the student can pointedly reject them, and persevere with his/her preferred formulations. . . in either case, learning something about communicating better in written language. It doesn't matter where each phrase or sentence came from, but only that it represents grammatical practice and good writing, and that both teacher and student are united in pushing back the walls of darkness.!

The students are taught to begin using the unique capabilities of the computer, sketching words and sentences, arranging and rearranging ideas, blocks of words, moving from fragments and outlines to finished paragraphs, treating the process of text creation as though shaping the amorphous flow of thought into words and ideas, in much the same way as poking and squeezing clay into meaningful forms. Collaborative writing offers a constructive and active relationship between teacher and student. It is a revolutionary approach and after several years of trial and error, the process seems to be working.

Spreading The Gospel

A researcher at the Center for Applied Linguistics studied the Gallaudet program and found a measurable increase in writing fluency. Joy Peyton declared: "Their desire to communicate forces their writing to improve, especially as they gain confidence and their communication becomes more complex."

The program seems also to work for normal people, as well as for children with other learning disabilities. Based on Batson's work, the University of Minnesota last year adapted the system to some general writing courses. Professor Terry Collins: "I see progress already. The attitude of students changed dramatically in six weeks." Deaf and non-deaf, students "lose their fear of standard English. They are happy to be in class, and their work is handed in on time. . ." The *Washington Post* reports interest from all over the world, and Gallaudet has established a research consortium with six other universities to continue exploration and expansion of the system for different teaching goals.

It is being used to teach English as a second language, reading and writing for dyslexics, for teaching remedial English, for normal college composition classes, for research methods instruction, and other purposes, with what already appears to be considerable success. It has been used to connect students with teachers remotely, and to connect classes at different universities simultaneously with each other. It is not expensive to install and both teachers and students demonstrate great facility in mastering the hardware.

We are at the threshold of a change in the use of microcomputers in education. From the initial great expectations and disappointments of "teaching machines," with their repetitive interactive software, we are now beginning to garner the more organic and humanistic capabilities of the technology, giving people tools to learn and to perform old tasks in slightly better ways, and bringing people closer to each other and the inherent challenges of their work. At the same time, the technology itself is maturing and becoming more responsive to human needs... ●

Applying The Atari continued from page 393

PC board you'll see that there are two ROM positions, one of which is labeled A601 and the other A602. Space Invaders was mounted on position A601, but Rev. C was mounted on position A602. At the time I was determining compatibility, I thought it was possible that there was a difference between the two. Thus, the final check consisted of determining that a ROM that works in position A602 also works in position A601.

First I checked that Rev. C had not been destroyed by the desoldering. For that I installed a socket at position A602, and then mounted Rev. C on it. I then plugged the cartridge into the computer, and it worked. Since I knew that Space Invaders was mounted at position A601 and had worked on the motherboard, all I needed to do was mount Rev. C at position A601 and verify that it worked. If it did work on position A601, it certainly would work on the motherboard. So I mounted Rev. C on a socket at position A601 and plugged in the cartridge. It didn't work. When I turned on the 800XL, the self test screen appeared. I tried pressing Reset, Option and other keys but BASIC wouldn't appear. At that time I was determined to install Rev. C on the motherboard, and I did even though it was possible that it wouldn't work or that Rev. C would be destroyed. It worked! Why it didn't before, I don't know.

Briefly now, I also placed Rev. B, which was removed from the motherboard, in both cartridge positions A601 and A602, and it worked in both. Perhaps when I placed Rev. C in cartridge position A601, some flux prevented a good electrical connection. I haven't tried to find a reason why Rev. C didn't work in position A601. I also haven't ascertained if both cartridge positions are identical. It may be they are not, but perhaps it doesn't matter for BASIC Rev. B or Rev. C. Since the exchange worked, I just closed the 800XL and decided that I had experimented enough. If any of your readers are interested in making the exchange, they'll be happy to know that it's possible.

J.V. Martinez
Los Angeles, CA

Often the best way to learn how to do something on your computer is to just jump in and experiment. Your description of your procedure for determining whether Rev. B BASIC could be replaced by Rev. C is a good example of analytical thinking and it sounds like you've learned quite a bit. Thanks for sharing your findings.

Next Month

More reader mail, type-in listings, and news.

Readers' questions, comments and contributions are welcome. Please enclose a self-addressed, stamped envelope (SASE) for a personal reply.

"Program Perfect" is a utility used to check for typing errors when entering programs from this column. Readers can send $5 for a diskette or a SASE for a listing of this program.

Address all correspondence to: Jeff Brenner, "Applying The Atari 9/87" c/o *Computer Shopper*, P.O. Box F, Titusville, FL 32781-9990. ●

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Upgrades continued from page 394

Upgrade," with a parts cost of around $30. The real cost for this upgrade is in man-hours assembling it. It should not be attempted by beginners in electronic work, although the plans (complete with Picture Files for help) are specific enough to guide any reasonably experienced solder jockey. The mod has two stages—if you do only the first part, you can fully use the extended RAM in about 2½ hours of careful work. To complete the mod and get "full" Axlon compatibility takes another hour or so.

Note: This mod Is Not memory compatible with the XE computers. You will Not be able to use software designed for the XE and XL upgrades nor BASIC XE, but instead must use Axlon type RAMdisk drivers and software. This incompatibility is a serious drawback to this mod, but the RAMdisk capability is still worth the effort. (The original SynFile and SynCalc use the Axlon system and Will be used, allowing Huge databases!)

The 400 Upgrade

Although 48K upgrade kits for the 16K 400 computer have long been available, the supply (and demand) has just about disappeared. The effort and expense of this upgrade is typically not worthwhile considering the limitations of the 400 keyboard and the price of new XL and XE machines.

The 800XL Upgrades

One of the first upgrades for the XL was invented by Claus Buchholz and published in *Byte* magazine. His original design was not compatible with the 130XE, but since it predated the XE there was no standard to follow. Claus soon modified it to be XE compatible and placed the plans and source code for his RAMdisk drivers in the public domain. That effort started the real avalanche of upgrades.

At first a circuit board with the necessary support chips had to be hard wired. The circuitry on the board depends on which Antic chip your XL has. Fortunately for the sanity of the technical members of user groups who were being asked to do upgrades, several plug in boards became available. (I would personally pay for a board out of my own pocket before I could ever be persuaded to hard wire one again!!)

If you are fortunate, all the chips will be in sockets. If so, then changing the required chips will be a snap. If not, then exercise great care in desoldering the chips and carefully inspect the double sided board for damaged paths. Repair any damage and install sockets. This will make it far easier to change any chips which may go bad in the future.

The Ramaster is the exact Buchholz circuit on an excellently designed plug in board. This is the one I have used on the XLs I have upgraded. The quality of the board is very good and it has the additional circuitry on board which is required for the old Antic chips. You merely place a jumper for the particular chip you have. This board is available for about $30 w/o memory or $62 (chip market pending) with memory. Either way, it comes with a disk full of handlers. These units may not be available for too much longer, as the company does not plan to produce more circuit boards. For more info contact ABC Consulting (313) 261-7609.

The Rambo XL

No, this is not a tough guy computer that goes out and blows up Commodores at night. It is an upgrade board by ICD, makers of SpartaDOS and many fine pieces of hardware for the 8-bit Ataris. I have no personal experience with the Rambo XL, but based on my experience with other ICD products as well as reports from other users, it is a good quality product. It is an XE compatible upgrade with the added benefit of being able to be used on a 1200XL! The installation is reasonably straightforward, with some significant addition of jumpers if used with a 1200XL. Base price (retail) is $39.95. For more info, contact ICD Inc. (815) 968-2228 or your local Atari dealer.

The Ramcharger

This memory upgrade is a relative newcomer. It requires no modification to the computer itself and has the advantage of being able to work with the original 800s since it is plugged into the cartridge slot. It does cost substantially more than the other upgrades though. The 256K cartridge is $150. They have a 512K version for $200 and 1 meg version for $300. Included with the cartridge is MyDOS and it is compatible with the Axlon upgrade to give you 288K in SynCalc and SynFile+. For more info, contact Magna Systems (718) 939-0084 or your local Atari dealer.

The Newell Upgrade

The upgrade board by Newell Industries is not compatible with any of the above upgrades, that is, it will Not work using the same RAMdisk handlers. It is more nearly compatible to the actual 130XE in that it retains the Antic enhanced mode. (The 130XE allows you to use the extra memory for the CPU or as video RAM (Antic). Since there is very little software which uses the Antic mode, this is not often an important consideration. Newell also sells the Omnimon/Omniview alternative operating systems for the XL/XE, and has a version that includes the 256K upgrade and a Handler in the ROM chip. This gives some interesting added possibilities. For more info, contact Newell Industries (214) 442-6612 or your local Atari dealer.

The 600XL Upgrades

After having done several 800XL upgrades, someone asked about upgrading the 16K 600XL to 64K. I thought, 'At last! A use for all those 4164s. No such luck, where the 800XLs use 8 64K by 1 bit chips, the 600XL uses 2 64K by 4 bit chips. This means that that pile of old chips you've been saving is useless and also that the 256K upgrades for the 800XL will not work on the 600XLs. It is an easy upgrade though requiring only the two new memory chips and 3 jumpers. Most clubs have these plans available, or buy a kit from Computer Service Land for about $30; (703) 237-2950.

Recently a 256K upgrade for the 600XL has been released by Gordon Filion, a Canadian designer, but I have not yet tried out the plans for this mod. It looks more difficult than most of the other upgrades, but for no more money than an 800 upgrade, it raises any 600XL to the highest level of usability. Contact Gordon at #26-249 Kitchcener Cr., Kamloops, B.C., Canada, V2B 1B9.

Additionally, several sets of plans have circulated for upgrading the 1200XL to 256K, as well as 512K upgrades for the 800XL. I have seen several of these but have not talked to many users who have tried them. For more information on these, contact your user group or call the CHAOS BBS (the number is at the end of this article).

The 320K 130XE

First, I'd like to thank Scott Peterson for sharing the upgrade instructions with Atari users. At this time, most of the XE upgrades are being done by hand from the public domain plans, as the XE has all soldered chips, making a kit difficult or impossible. Nevertheless, it's a very clean modification since most of the circuitry for bank selection is already built in the XE.

To do the 320K upgrade is very simple if you have any experience at all with soldering. I do make one exception to his instructions though. He recommends against solderwick and I swear by it (I Hate Soldersuckers!!!). His reasoning is that you may damage the circuit paths. If you use the commonly recommended 25 watt iron you will find he's correct. This is not hot enough to desolder components (33 watt is ideal) I also highly recommend installing sockets in the spaces where you removed ICs (8 16 pin and 1 40 pin socket). They are not absolutely necessary but this is the ideal opportunity. If you ever have a chip go bad in the future it will be a lot easier to replace this way.

The entire 320K can be done in less than an hour (most of this time being in removing the old chips). Only one chip is required in addition to the 256K memory chips, which are substituted for the second 64K bank.

The 576K upgrade is quite a

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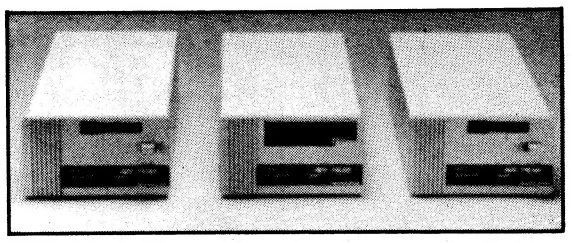

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Anatomy of Microchip continued from page 395

reference code for this particular batch.

When a microchip is first put into production, only a few wafers are produced initially to determine the actual yield of usable wafers. During this phase the engineers will tweak dials and equalize certain variables in order to achieve the maximum yield of perfect microchips. If at any time in the future a particular group of microchips fail, the semiconductor manufacturer can refer back to this log and study certain critical steps where the balancing of certain variables may have exceeded certain parameters. This data will be compared with other production runs to determine if similar failures may have resulted.

This is most important. When a particular microchip is in full production, twenty five wafers are produced in each lot. In the case of 6-inch wafers which may have up to a thousand dies on each, this translates into nearly 25,000 microchips. A processing failure of this magnitude is quite expensive. Certain microchips used in military, aerospace and satellite communications equipment must be fool-proof. It is impossible to retrieve a $50 million satellite orbiting 25,000 miles above the earth to replace a $10 microchip that failed.

Testing

Testing is a multi-phase process. As I mentioned earlier, each layer that has been placed on a microchip is checked and sized for accuracy in its registration. This gives the engineers a kind of device critique. If all layers show optimum parameters, it is an indication that this particular batch of wafers will produce high yields.

The determining factor will be actual electrical testing. This is done by means of scribe lines that have been laid down along the side of each die on the silicon wafer. These scribe lines serves a dual purpose. They are the guide for the saw that will cut the dice apart and turn them into actual chips; and they are also used as an area where test structures are built which are similar to the transistors and capacitors within the die itself.

These are a series of metal contacts that can be used to test resistance parameters. If the resistance is high, this is an in-

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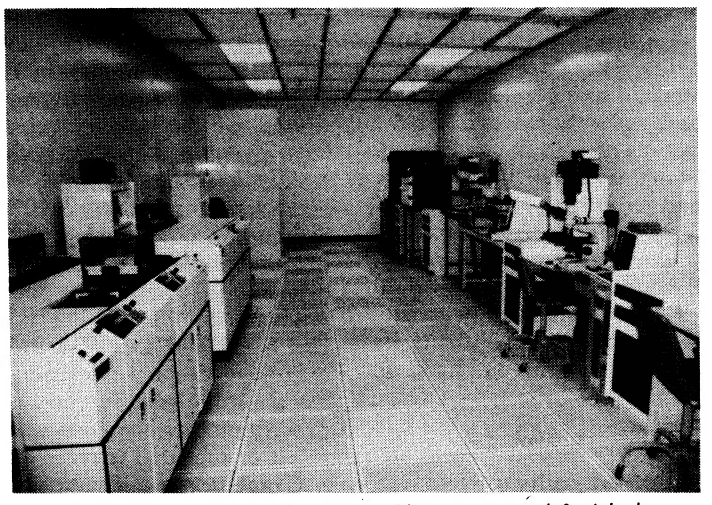

Photolithographic chamber where chips are exposed & etched.

Upgrades continued from page 396

bit more involved than the 320K. I don't recommend this for the novice. You have to undo some of the 320 upgrade, add 2 additional support chips, and piggyback 8 more 256K chips on the 8 previously installed. This involves a large number of jumper wires also. The additional time to do this mod was about 2 hours (so a total of about 3 hours to do the 576K at one sitting).

You also lose your internal BASIC ROM in the 576K mode. A switch is added which returns your internal BASIC but only gives you use of 192K. To use BASIC in the 576K mode requires a cartridge, such as BASIC XE.

The 1088K 130XE

This is the largest upgrade documented to date. Some have actually been built, although I wasn't that crazy. I built the 276K mod and have never come close to using it all in normal use. (I have filled it to see how many files it would hold.) In all honesty, the only reason I could see for doing 1088K would be one-upmanship (ask all your IBM friends how they can live with only 640K), although it may be useful on a BBS. Software to handle the memory will be a problem. Another potential problem is that if you use items such as the XM301 and PR Connection which take their power from the computer, they may not work properly do to inadequate power supply capacity.

NOTE: There are two files from Scott that tell how to make the 1088K XE...be sure you get the second one (it says "This one actually works" at the top)—the first proved not to!

In my opinion, the best DOS available, especially for upgraded machines, is SpartaDOS by ICD. Their RD.COM file will automatically format the RAMdisk for whatever configuration you have (up to 576K) with the command RD Dn: To reserve the extra 64K for BASIC XE the command is RD Dn: /E (space between : / IS REQUIRED). You can also enable the RAMdisk without formatting by RD Dn: /N. This would make it possible to copy a program and its required data files to the RAMdisk as D2: (or whatever), and then turn off the real disk drive and rename the RAMdisk as D1:

Information on most of these upgrades as well as many different RAMdisk handlers can be obtained by calling the CHAOS BBS at (517) 371-1106 in Lansing MI (home of Claus Buchholz!) Upgrade text files and programs are a primary focus of the CHAOS BBS, and are on-line at all times. ●

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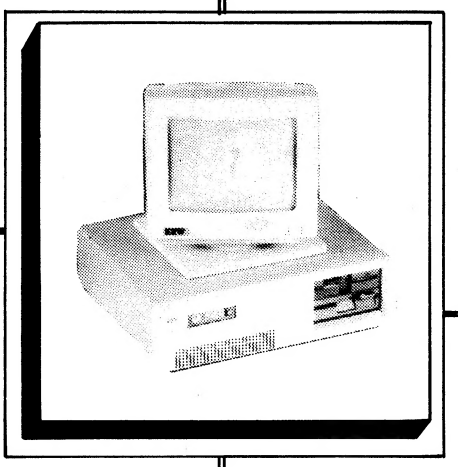

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